Advice for the 5.5 HW

1-3: Based on definitions of combinations and permutations.

4-8: Compute factorials, permutations, and combinations.

Problems 9 & 10

Keep in mind that when dealing with permutations "ab" is different than "ba", but in combinations "ab" and "ba" are the same.

11-13: Use multiplication rule and/or factorials.

14-16: Solve using permutations or combinations.

Problems 17 & 18

Keep in mind that you are dealing with non-distinct items in this problem.

Problems 19 & 20

Go back and look at Examples 12 & 13 in Objective 5, as well as the problem on Screen 4 of Objective 5. (I'd suggest taking good notes when you work the problem on Screen 4 of Objective 5.)

Problem 19

This one is challenging. I will walk you through a similar problem.

The grade appeal process at a university requires that a jury be structured by selecting 5 individuals randomly from a pool of 13 students and 13 faculty.
(a) What is the probability of selecting a jury of all students?
How many ways are there for selecting 5 of the 13 students?
13C5 = 1287 - this is the numerator.
How many ways are there for selecting 5 of the 26 people (13 students, 13 faculty)?
26C5 = 65,780 – this is the denominator.
To find the probability divide the number of ways of selecting 5 students by the number of ways of selecting 5 people: 1287 / 65780 = 0.01957

(b) What is the probability of selecting a jury of all faculty?
Similar idea, but the numerator will be the number of ways of selecting 5 ***faculty*** instead of 5 students.
How many ways are there for selecting 5 of the 13 faculty?
13C5 = 1287 - this is the numerator. (This is the same as part a because there are 13 students and 13 faculty.)
How many ways are there for selecting 5 of the 26 people (13 students, 13 faculty)?
26C5 = 65,780 – this is the denominator.

To find the probability divide the number of ways of selecting 5 faculty by the number of ways of selecting 5 people: 1287 / 65780 = 0.01957

(c) What is the probability of selecting a jury of 3 students and 2 faculty?
How many ways are there for selecting 3 of the 13 students?
13C3 = 286
How many ways are there for selecting 2 of the 13 faculty?
13C2 = 78
Numerator: 286 x 78 = 22,308

How many ways are there for selecting 5 of the 26 people (13 students, 13 faculty)?
26C5 = 65,780 – this is the denominator.
To find the probability divide the number of ways of selecting 3 students & 2 faculty by the number of ways of selecting 5 people: 22308 / 65780 = 0.33913